What is T.P.S.?

◆ <u>Overall TPS</u> = Is a way of ***THINKING***

(For Toyota Management it is the ***THINKING*** used to manage the building of cars that satisfy our customers needs)

◆ TPS thinking is guided by a focus on:

WASTE ELIMINATION
(Which will improve operation efficiency)

◆ TPS THINKING - is divided into:

①　**TPS - Principles**

Example: Do not pass the defect to the next process

②　**TPS - Tools**

Example: Andon System

◆**The TPS THINKING & PRINCIPLES have been used by it's members within the Toyota company for more than 40 years. During this period, the TPS Tools [andon, kanban, etc.] have been developed & standardized as the best known method to efficiently build Toyota vehicles that satisfy our customers with high production efficiency.**

The Challenge ⟶ IMPLEMENTATION

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Kreaflism's

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Principle?

As defined by *The American College Dictionary*

- An accepted or professed rule of action or conduct

- A fundamental, primary, or general truth, in which other truths depend

- right rules of conduct

- guiding sense of the requirements and obligations of right conduct

- an originating or actuating agency or force

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Principles

- Standard - IZATION

- Do Not Pass A Defect
  - Problems passed (flow-out) are repaired by the Group or person that generated the problem or defect.

- Highlight problems
  - when and where they happened
  - in the condition in which they occurred

- the **CHART** or **Tracking Activity**
  - shows the members what is needed better than Management
    (Part of getting involved)

- TPS tools are designed to clearly show:
  - Normal
  - Abnormal

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Principles

- Constant Small Improvements
  (focus on the work YOU DO)

- Need justifys the change
  (Equipment 10x slower but 10x $s les)

- Management ***must*** change 1st

- Only the TEACHER can fail

- No *Job Descriptions*
  - the delineation of what you do is determined by training

- Single market quality

- Manage trends
  STUDY$\longrightarrow$ ACTIVITIES

- Communications are the ***RESPONSIBILITY*** of the **Sender**

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Management Must Change 1ˢᵗ

❖ They must buy-in to the process
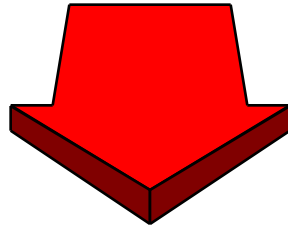
then and only then

should you take it to the **people**

and

there **should be** a **Plan**

on **How** and **When** to **Introduce New Things**
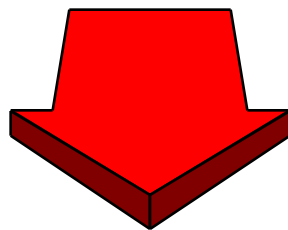
Follow-up = will determine **SUCCESS**

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Tools

- ***Just-In-Time***
- ***Jidoka***
- Kanban
- Heijunka
- Kaizen
- Standard Work
- Takt Time
- Work Sequence
- Standard In-process Stock

Jidoka and **Just-In-Time** are the 2 pillars in which the structure of the TPS system is supported.

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Examples Of TPS Thinking:

TPS Is <u>Not</u>

- People ➤ To do the work as they are told

- Competition ➤
  Set people and groups WITHIN the company against each other to identify the strong.

- Results Focus
  The individual <u>Boss</u> is responsible to get results; but, the system and methods used are what the <u>Boss</u> wants

TPS Is

- **PEOPLE** ➤ Are the strength of the company
  (The strength of the company comes from having the **PEOPLE INVOLVED!)**

- **COOPERATION**
  All members and groups work in cooperation with each other to jointly accomplish the goals of the company.
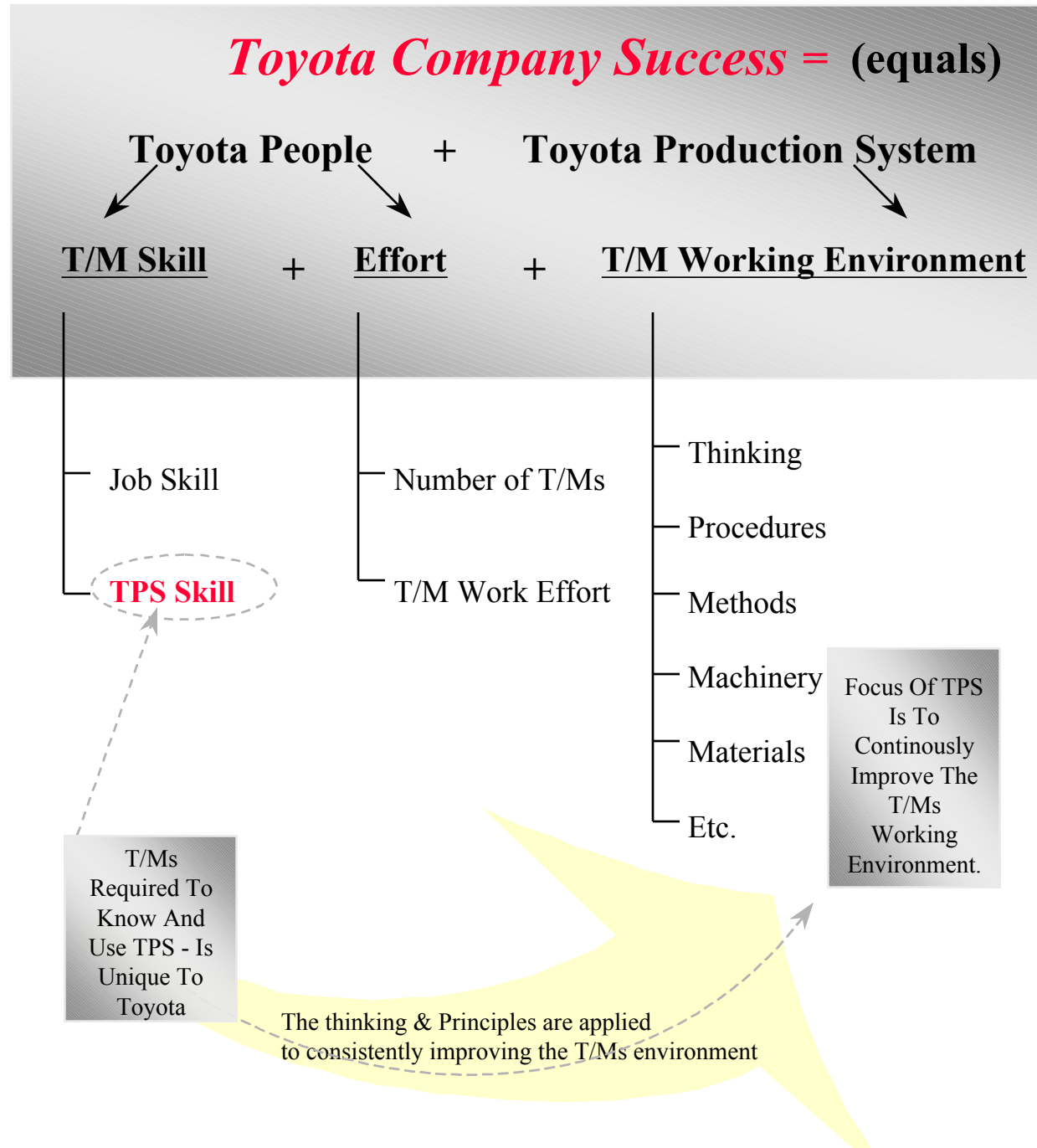
  COMPANY WIDE TEAMWORK

- **PROCEDURE FOCUS**
  The management team agrees to work within the
  <u>TOYOTA PRODUCTION SYSTEM</u> to obtain company results. The method used to obtain results <u>is</u> <u>IMPORTANT</u> and constantly under consideration for improvement

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Elements Of Success At TMM

The Toyota Production System (TPS) is an <u>efficiency based system</u>. Efficiency is gained by many small improvements performed by the <u>group</u> to improve the <u>T/M's working environment</u>.
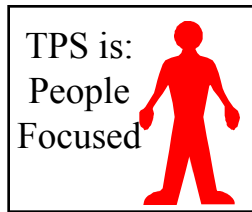
Toyota Company Success = (equals)

Toyota People + **Toyota Production System**

T/M Skill + **Effort** + **T/M Working Environment**

- Job Skill

- **TPS Skill**

- Number of T/Ms

- T/M Work Effort

- Thinking

- Procedures

- Methods

- Machinery

- Materials

- Etc.

T/Ms Required To Know And Use TPS - Is Unique To Toyota

Focus Of TPS Is To Continously Improve The T/Ms Working Environment.

The thinking & Principles are applied to consistently improving the T/Ms environment

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How TPS Works For People

A Goal Of TPS is: PEOPLE - Safe and Motivated

TPS is:
People
Focused

	People Needs	TPS
1	Know what is expected of them	Defines Normal vs Abnormal Operation Conditions
2	Able to influence and correct problems	Problem Solving Activities
3	Some method to keep problems from returning	Countermeasures and Standardization

TPS Tools Are Developed To Show
Either

NORMAL:
OPERATION CONDITION

Meets Standard or
Agreed Procedure

ABNORMAL:
OPERATION CONDITION
Does Not Meet Standard
or Agreed Procedure

(Conditions are defined by: 4S,
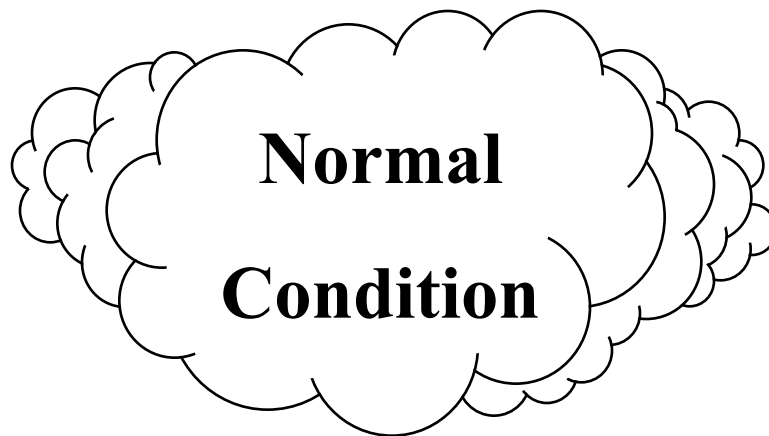Kanban, Visual Control, Etc.

Challenge
Target/Goal

PROBLEM SOLVING
Problem solving incorporates:
reference to standard, 5 why analysis,
root cause identification and
countermeasure development.

KAIZEN
Activity

STANDARDIZATION = The record of success on
how to hold normal operating conditions (Ex.: Standardized
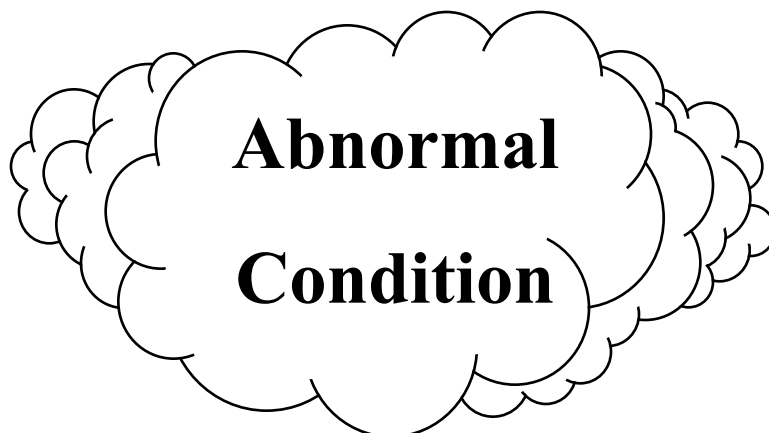work, procedures and policies).

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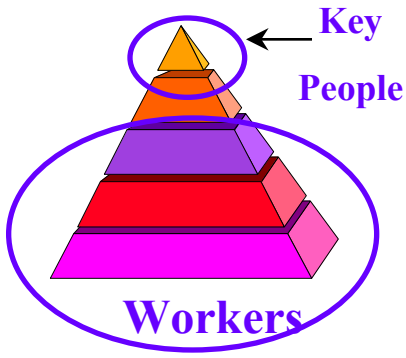# T.P.S. Is A Way Of Thinking!
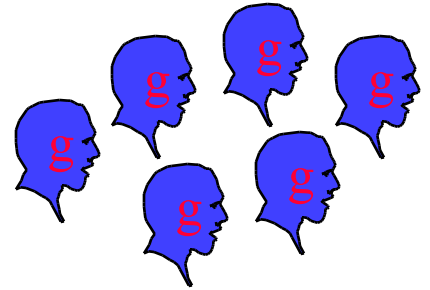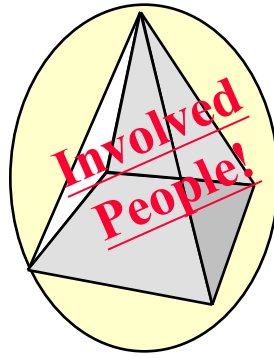
The Thinking points out what is a….

Normal

Condition

and what is an

Abnormal

Condition

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Other - A B C D E F

Toyota - A B C D E F & g g g g g g g

Key People ←

Workers

Results Focus

Involved People!

Procedure Focus

System   Info   Methods

Includes Targets & Goals

Evolve The System

Roles

Quality

Judgment

Principles

Lead The System

Tools

Methods Used
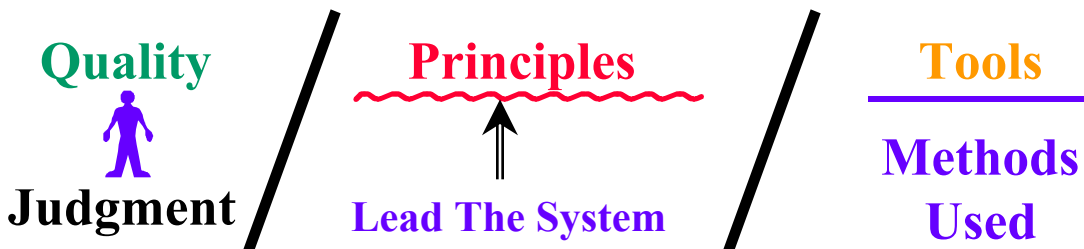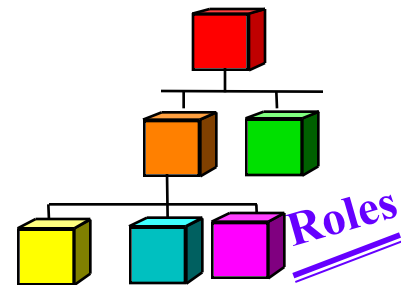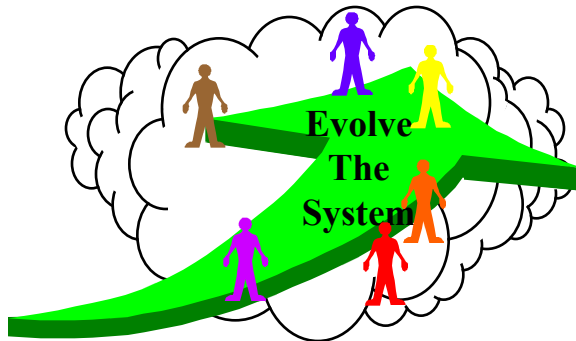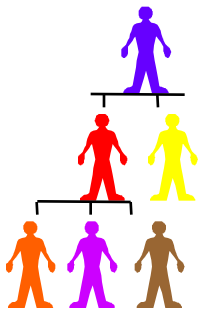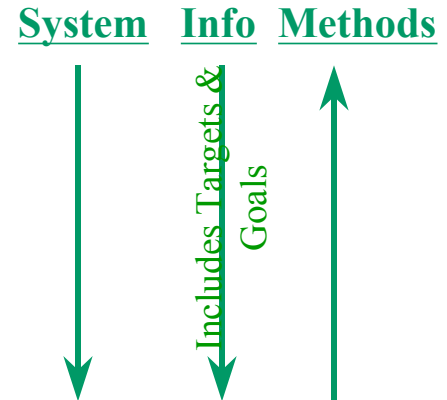
Skill + Effort + Situation) = Outcomes

Job
System

# of People
Worker Effort

Environment
Set-up

Good
or
Poor

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Examples Of TPS Thinking:

TPS Is <u>Not</u> ⇒	TPS Is
■ Revolutionary Change	■ Evolutionary change Involved T/Ms in method development
■ Quick fixes by decree of Management	■ **<u>No</u>** quick fixes exist to the **<u>Real</u>** root cause (Temporary controls are okay)
■ Self-directed Teams	■ Involved T/M's in method development
■ "In the Boss's head" for the Employee's to extract	■ On-paper -- Approved taught to employee's by Mgmt
■ 5 **<u>Who</u>** analysis to root blame	■ 5 **<u>Why</u>** analysis to root cause

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Can you see more capabilities, capacity, etc. in the Company's **_People_** then is actually being utilized?

Does anyone not see more capabilities / capacity in their Company's **_People_** then is actually **_being used?_**
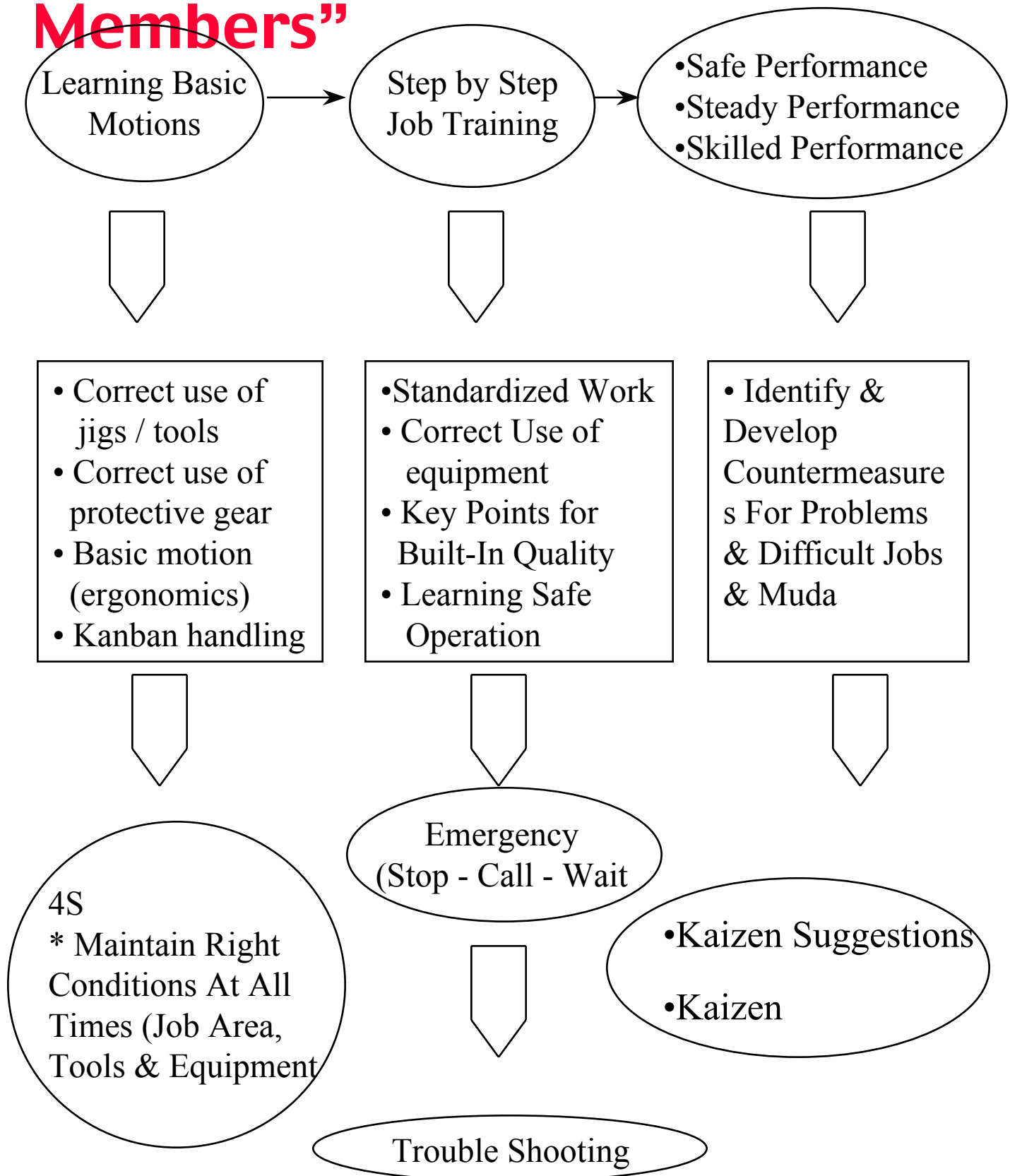
True Leadership

Is what is known right?

People have a deep inner sense of what is correct…the TRUE LEADER BRINGS IT OUT

The people's energy will rally to follow!

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"What Is Expected Of Team Members"

```
┌─────────────┐      ┌─────────────┐      ┌──────────────────────┐
│  Learning   │ ───▶ │ Step by Step│ ───▶ │ •Safe Performance    │
│Basic Motions│      │Job Training │      │ •Steady Performance  │
│             │      │             │      │ •Skilled Performance │
└─────────────┘      └─────────────┘      └──────────────────────┘
```

| • Correct use of jigs / tools
• Correct use of protective gear
• Basic motion (ergonomics)
• Kanban handling | •Standardized Work
• Correct Use of equipment
• Key Points for Built-In Quality
• Learning Safe Operation | • Identify & Develop Countermeasures For Problems & Difficult Jobs & Muda |

4S
* Maintain Right Conditions At All Times (Job Area, Tools & Equipment

Emergency (Stop - Call - Wait

•Kaizen Suggestions

•Kaizen

Trouble Shooting

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Does anyone not see more capabilities / capacity in their Company's *__People__* then is actually *__being used__*?

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